

Chapter 2.30

STREET LIGHTING DESIGN STANDARDS

*The Lincoln Electric System is assigned
responsibility for administration of these design standards.*

Section 1. OBJECTIVE

The objective of this policy is to outline the street lighting practices and procedures to be followed by Lincoln Electric System.

Section 2. POLICY

It shall be the policy of Lincoln Electric System to install and/or operate and maintain street lighting systems for the City of Lincoln, the City of Waverly, the Lancaster County Board and the Nebraska State Highway Department (for streets located in the LES service area). Lincoln Electric System shall establish, encourage, promote and employ energy conservation measures in the design, operation and maintenance of these street lighting systems.

Section 3. RESPONSIBILITIES

3.1 Engineering Services Division

The Street Lighting Department is responsible for research, design and engineering of street light facilities. The Department establishes the guidelines and standards that are to be met for the installation and operation of the street lighting systems. The Department coordinates the joint use of poles for street lighting and traffic signals. They are also responsible for maintaining records on the number of street lights so that Consumer Accounting can process billings.

The System Planning Department develops the annual capital improvement plan (which identifies street lighting projects) and assists in prioritizing these projects.

3.2 Operations Division

The Construction Management Supervisor assists in assigning work, monitoring estimated work time to actual, dealing with contractors, area security lighting and project inspections.

The Maintenance & Troubleshooting Department performs construction and maintenance on the street lighting systems, fields calls from customers regarding street light maintenance needs, and assigns a crew to handle problems. It maintains up-to-date area maps to assist personnel in locating underground street light wire for the "one-call" procedure and initiates the billings for damage processed by Miscellaneous Accounts Receivable (General Accounting).

3.3 Power Supply Division

The Rates, Forecasting & Load Research Department analyzes costs, revenues and rates on an annual or as needed basis and provides recommendations to the Rate Committee for street and area security light rates.

3.4 Finance & Accounting Division

Consumer Accounting Department processes monthly bills for street and area security light customers from information provided by Operations via Engineering.

Miscellaneous Accounts Receivable Department processes billings for damage done to street lighting systems resulting from the acts or omissions of third parties.

General Accounting Department is responsible for tracking revenues and costs for financial reporting and maintaining property records (particularly the street light investment accounts).

Section 4. PROVISIONS

4.1 Street Lighting Energy Conservation Program

The objective of this program is to reduce street lighting energy consumption without significantly changing existing light intensities in areas presently lighted with other than high pressure sodium vapor (HPSV). Light sources of equal or greater efficiencies than HPSV may be employed in the future with fixturing to produce maximized foot candle intensities on roadways between curb lines. As such sources become available, LES Engineering will study economic advantage feasibilities before considering abandonment of the present HPSV standard.

4.2 Standard Street Lighting

LES will install/replace and maintain, "standard lighting" in any area where the City Council has not provided for "ornamental street lighting". The standard street light shall normally consist of a wood pole and bracket with a pendant luminaire. Wiring will be overhead but may be underground at the discretion of LES Engineering.

For residential areas, high pressure sodium vapor 100 watt street lights will be located at street intersections and at approximate mid-block normal interval spacings of 200 feet. Informal petitions signed by affected property owners or requests by the Mayor, City Council, Police Department or Public Works Department will precipitate investigation by Street Light Engineering to design and order the installation of justifiable lighting.

For non-residential areas the street lights will be designed to 70% of Illuminating Engineering Society (IES) recommended practices. Request from property owner, interested party in the area, or city department will precipitate investigation by street light Engineering to design and order the installation of justifiable lighting.

4.3 Ornamental Street Lighting (new)

Ornamental Lighting shall be constructed in areas designated by the City Council as "Ornamental Lighting Districts" or mayoral "Executive Order" areas and shall be of a design specified to provide illumination in accordance with LES standards. Such systems are to be served by underground wiring and design/construction will consist of a metal, concrete or fiberglass Standard (pole).

For residential areas the standard street lamp/luminaire will be post top with a 70 watt high pressure sodium vapor type light, or an LES approved lamp/luminaire source of equal or greater efficiency, mounted generally 20 feet above grade. The units shall be located at all intersections and at approximate mid-block normal interval spacings of 240 feet.

For non-residential areas the street lights will be designed to 70% of IES recommended practices. The City Council authorizes the City Engineer or subdivision developer (in the case of "Executive Order" areas) to advertise for equipment and installation-construction bids for ornamental lighting. LES is responsible for inspecting and monitoring work done by contractors and maintaining the lighting after its installation.

If an existing wood pole (bracket style) area desires ornamental lighting, the property owners in that area shall pay the difference between such "standard street lighting" and "ornamental residential street lighting".

4.4 Existing Street Lighting (replacement)

LES will replace existing street lighting if it has been determined that maintenance of the existing system is no longer economically feasible. LES will replace the system with standard components equivalent to those currently being installed. Requests for special lighting equipment requires specific action by property owners/developers and approval by the LES Engineering staff.

4.5 Arterial Street Lighting

This type of street lighting provides illumination levels higher than those associated with residential streets. High pressure sodium vapor lamps and luminaires will be used, or a source of equal or greater efficiency, for delivering objective foot candle levels to the roadway.

Original design lighting intensities conform to Lincoln City Council directives which were described as 70% of IES recommended practices. All new installations continue a reduction practice in order to minimize street lighting energy consumption.

"Permanent" arterial lighting consists of metal, concrete or fiberglass poles specifically designed to support bracket mounted pendant street lights, generally served with underground wiring.

"Temporary" arterial lighting may consist of wood utility poles supporting bracket mounted fixtures served overhead. Such systems will be converted to permanent at such time as roadway improvement factors, capital improvement funds and system age priorities permit.

4.6 Street Light Maintenance

LES will responsibly maintain street lighting in a manner recognizing public safety and convenience needs of such systems.

The principal objective is to keep as many lights as possible functioning properly and responding promptly to "light-out" call-ins.

Lighting which becomes unreliable and maintenance prone will be replaced as expeditiously as possible, within budget limitations.

4.7 Area Security Lights

Area security lights are installed at the request of the customer (commercial or residential) on existing LES poles. The service must be approved by Operations and is provided and regulated under a service contract signed by the customer. After expiration of the initial term of the service contract, it is automatically extended indefinitely unless canceled by written notice by the customer or LES pursuant to the terms of the service contract.